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Improved cast iron. By D. Raseev.

The GOST V -1412 -42 and 2611 - 44 standards show the properties of cast iron with a yield point of 12 to 38 kg/mm<sup>2</sup>, bending resistance of 28 -36 kg/mm<sup>2</sup> and compression resistance of 50 - 120 kg/mm<sup>2</sup>.

Countries with highly developed industry tend to substitute cast iron for cast or forged steel, if the metal is to undergo high stresses.

~~Examples~~ The head stock bars of large boring machines, of 15 to 18 m length, 500 to 550 mm diameter and 20 tons weight, pinion wheels, and 2000 HP Diesel engine piston rods and crankshafts are given as examples.

Mention is also made of the system used by Ford for substituting castings for forgings which has led to the development of an automobile engine made almost entirely of castings.

Soviet industry is ~~increasingly~~ manufacturing improved castings on a large scale for various elements of heavy industrial equipment. For example, the principal parts of a construction of a total weight of 4057 tons, a length of 180 m and a total power output of 2000 KW, designed and constructed by twelve Soviet factories during 1945 within the space of one year were made of improved cast iron.

The production of high-grade cast iron has been developed intensely during the past 20 years, especially in England and the United States.

In the Soviet Union, a number of Scientific Research Institutes are working on the problem of improved cast iron, such as the VISHOM, ENIES, TsNIITMash, the Moscow Steel Institute, The Urals Industrial Institute, the Stankalit Factory, Restsel Mash., the Kiev Bolshevik Factory, the Khar'kov Tractor Factory, the Gerlovsk Machine Factory, Bural Tyash Mash., etc., which all use this method for making high-grade castings.

The article gives a short outline of the principles and methods of producing improved cast-iron, and a number of results obtained with this method at the Foundries of the Central Workshops at Campina and in the factories of Ploesti.